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EXAMINER

ROCHE, LEANNA M

ART UNIT

PAPER NUMBER

1771

DATE MAILED: 07/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application N .

09/532,400

Examiner

Leanna Roche

Applicant(s)

HUME, JAMES M

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 3,4,6,7,13 and 18-28 is/are pending in the application.
- 4a) Of the above claim(s) 18-21 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 is/are allowed.
- 6) ☒ Claim(s) 3,4,13 and 22-28 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 3 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Scott (USPN 3844527).

Scott teaches a water reservoir liner for concrete forms comprised of a flexible foam of elastomeric material such as epoxy having an integral skin. This reads on Applicant's bi-layer liner for concrete structures comprising a surfacer layer (Scott's integral skin) and a barrier layer (Scott's elastomeric foam layer).

6. Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by Bomhard (USPN 4426817).

Bomhard is directed to a double walled tank for low-temperature liquids comprising an outer tank constructed of reinforced concrete, a metal liner on the inside surface of the outer tank, and a polyurethane foam thermal insulation layer on the inside surface of the metal liner. This reads on Applicant's bi-layer liner for concrete structures comprising a surfacer layer (Bomhard's metal liner) and a barrier layer (Bomhard's polyurethane foam layer).

7. Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by Sawyer (USPN 5098059).

Sawyer teaches a concrete forming member having form liners comprised of a polyurethane foam piece having a flexible, non-permeable plastic film sheet on a surface of the foam piece. This reads on Applicant's bi-layer liner for concrete structures comprising a surfacer layer (Sawyer's non-permeable plastic film) and a barrier layer (Sawyer's polyurethane foam piece).

8. Claims 3 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Hume et al. (USPN 5618616).

Hume is directed to a liner comprising a primer layer, a first and second barrier layer and an intermediate foam layer where the foam layer is sandwiched between the first and second barrier layers. The first barrier layer of Hume reads on Applicant's surfacer layer. The intermediate foam layer of Hume reads on Applicant's barrier layer. The foam layer of Hume has a cure rate of less than 60 seconds.

Hume anticipates Applicant's bi-layer liner because although the patent is directed to a multi-layered liner, the language of Applicant's claim 1, "a bi-layer liner comprising," does not exclude the presence of an additional layer and would therefore read on embodiments in which additional layers are present.

9. Claims 3 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Patterson et al. (USPN 4217383).

Patterson is directed to a foam coated carpet backing comprising a backing layer (Applicant's surfacer layer) and a foam layer (Applicant's barrier layer). The foam layer of Patterson may be 20 to 35 mils thick.

Patterson anticipates Applicant's bi-layer liner because although the carpet backing of Patterson is not specifically directed to a bi-layer liner for concrete structures, a preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Presently, Applicant's preamble, "a bi-layer liner for lining concrete structures," does not add any structural limitation to Applicant's final product. Therefore, Applicant's claim is read as being directed to a barrier layer comprised of a foam, which is disposed on a surfacer layer.

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 4, 13 23, 25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott (USPN 3844527) in view of Tramontano et al. (USPN 5283299).

Scott discloses a water reservoir liner for concrete forms comprised of a flexible foam of elastomeric material such as epoxy having an integral skin. This reads on Applicant's bi-layer liner for concrete structures comprising a surfacer layer (Scott's integral skin) and a barrier layer (Scott's elastomeric foam layer). Scott discloses integral skins on both the front and back surfaces of the elastomeric material. This reads on Applicant's multi-layer liner having a first barrier layer (Scott's front integral skin), a surfacer layer (Scott's elastomeric foam layer) and second barrier layer (Scott's back integral skin).

Scott, however, does not specifically disclose using a polyurea foam as their elastomeric foam layer (Applicant's barrier layer in Claim 4, Applicant's surfacer layer in Claim 13). However, Tramontano teaches that it is known in the art of aqueous coating compositions that polyurethane polymers are analogous to polyureas (Column 3, lines 50-52), and that such coatings disclosed by Tramontano may be applied as coatings on concrete. Therefore, it would have been obvious to the skilled artisan at the time this invention was made to use a polyurea foam layer in the water reservoir liner of Scott since polyurethane and polyurea coatings are known equivalents in the art of coating compositions (including coatings for concrete) and selection of either of these equivalents would be within the level of ordinary skill in the art.

Neither Scott nor Tramontano disclose a curing time of less than 60 seconds. Nachtman teaches that polyurea foams, which may be used for coating substrates such as metals and concrete (Column 2, lines 22-29), have very rapid set times typically taking less than a minute to set (Column 6 lines 3-23). It appears that the water reservoir liner of Scott in view of Tramontano is substantially identical to the presently claimed liner for concrete structures because both are comprised of polyurea foam layers having surface layers. Thus, it is believed by the examiner that polyurea foam layer of Scott in view of Tramontano inherently possesses a cure rate within Applicant's presently claimed ranges. Additionally, the presently claimed cure rate would have obviously been present once the water reservoir liner of Scott in view of Tramontano was provided.

12. Claim 4 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bomhard (USPN 4426817) in view of Tramontano et al. (USPN 5283299).

Bomhard is directed to a double walled tank for low-temperature liquids comprising an outer tank constructed of reinforced concrete, a metal liner on the inside surface of the outer tank, and a polyurethane foam thermal insulation layer on the inside surface of the metal liner. This reads on Applicant's bi-layer liner for concrete structures comprising a surfacer layer (Bomhard's metal liner) and a barrier layer (Bomhard's polyurethane foam layer).

Bomhard, however, does not specifically disclose using a polyurea foam as their elastomeric foam layer (Applicant's barrier layer in Claim 4). However, Tramontano

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teaches that it is known in the art of aqueous coating compositions that polyurethane polymers are analogous to polyureas (Column 3, lines 50-52), and that such coatings disclosed by Tramontano may be applied as coatings on concrete and metal.

Therefore, it would have been obvious to the skilled artisan at the time this invention was made to use a polyurea foam layer in the tank liner of Bomhard since polyurethane and polyurea coatings are known equivalents in the art of coating compositions (including coatings for concrete) and selection of either of these equivalents would be within the level of ordinary skill in the art.

With regard to Claim 23, neither Bomhard nor Tramontano disclose a curing time of less than 60 seconds. Nachtman, however, teaches that polyurea foams, which may be used for coating substrates such as metals and concrete (Column 2, lines 22-29), have very rapid set times typically taking less than a minute to set (Column 6 lines 3-23). It appears that the tank liner of Bomhard in view of Tramontano is substantially identical to the presently claimed liner for concrete structures because both are comprised of polyurea foam layers having a surface layer. Thus, it is believed by the examiner that polyurea foam layer of Bomhard in view of Tramontano inherently possesses a cure rate within Applicant's presently claimed ranges. Additionally, the presently claimed cure rate would have obviously been present once the tank liner of Bomhard in view of Tramontano was provided.



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13. Claims 4, 13, 23, 25, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawyer (USPN 5098059) in view of Tramontano et al. (USPN 5283299).

Sawyer teaches a concrete forming member having form liners comprised of a polyurethane foam piece having a flexible, non-permeable plastic film sheet on a surface of the foam piece. This reads on Applicant's bi-layer liner for concrete structures comprising a surfacer layer (Sawyer's non-permeable plastic film) and a barrier layer (Sawyer's polyurethane foam piece). The non-permeable plastic film of Sawyer may be applied to both the front and back surfaces of the polyurethane foam piece. This reads on Applicant's multi-layer liner having a first barrier layer (Sawyer's front plastic film), a surfacer layer (Sawyer's foam layer) and second barrier layer (Sawyer's back plastic film layer). Sawyer also discloses that their plastic film layers (Applicant's first and second barrier layers in Claims 13, 25 and 27) may be about 10 mils thick. This reads on Applicant's less than 80 mils thick limitation.

Sawyer, however, does not specifically disclose using a polyurea foam as their elastomeric foam layer (Applicant's barrier layer in Claim 4). However, Tramontano teaches that it is known in the art of aqueous coating compositions that polyurethane polymers are analogous to polyureas (Column 3, lines 50-52), and that such coatings disclosed by Tramontano may be applied as coatings on concrete and metal. Therefore, it would have been obvious to the skilled artisan at the time this invention was made to use a polyurea foam layer in the concrete form liner of Sawyer since polyurethane and polyurea coatings are known equivalents in the art of coating

compositions (including coatings for concrete) and selection of either of these equivalents would be within the level of ordinary skill in the art.

Neither Sawyer nor Tramontano disclose a curing time of less than 60 seconds. Nachtman, however, teaches that polyurea foams, which may be used for coating substrates such as metals and concrete (Column 2, lines 22-29), have very rapid set times typically taking less than a minute to set (Column 6 lines 3-23). It appears that the concrete form liner of Sawyer in view of Tramontano is substantially identical to the presently claimed liner for concrete structures because both are comprised of polyurea foam layers having surface layers. Thus, it is believed by the examiner that polyurea foam layer of Sawyer in view of Tramontano inherently possesses a cure rate within Applicant's presently claimed ranges. Additionally, the presently claimed cure rate would have obviously been present once the concrete form liner of Sawyer in view of Tramontano was provided.

14. Claims 4, 13 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hume et al. (USPN 5618616) in view of Tramontano et al. (USPN 5283299).

Hume teaches a liner comprising a primer layer, a first and second barrier layer and an intermediate foam layer where the foam layer is sandwiched between the first and second barrier layers.

With regard to claim 4, the first barrier layer of Hume reads on Applicant's surfacer layer, and the intermediate foam layer of Hume reads on Applicant's barrier layer. The foam layer of Hume has a cure rate of less than 60 seconds.

With regard to Claims 13 and 25-28, the first and second barrier layer of Hume read on Applicant's first and second barrier layers, respectively. The intermediate foam layer of Hume reads on Applicant's surfacer layer disposed on said first barrier layer. Additionally, Hume discloses first and second barrier layers comprised of the same material, a polyurea and isocyanate blend. The thickness of the barrier layers of Hume is disclosed as less than 80 mils in thickness. The cure rate of the barrier layers of Hume is less than 60 seconds.

Hume, however, does not specifically disclose using a polyurea foam as their intermediate foam layer. Tramontano teaches that it is known in the art of aqueous coating compositions that polyurethane polymers are analogous to polyureas (Column 3, lines 50-52), and that such coatings disclosed by Tramontano may be applied as coatings on concrete and metals. Therefore, it would have been obvious to the skilled artisan at the time this invention was made to use a polyurea foam layer in the liner of Hume since polyurethane and polyurea coatings are known equivalents in the art of coating compositions (including coatings for concrete) and selection of either of these equivalents would be within the level of ordinary skill in the art.

***Allowable Subject Matter***

15. Claim 6 is allowed.
16. Claim 7 would be allowable if rewritten or amended to overcome the objection set forth in this Office action.
17. The prior art of record does not teach or suggest a liner for a concrete structure which is specifically comprised of two foam layers, one of the foam layers being a polyurea foam layer.

***Response to Arguments***

18. Applicant's amendment to Claim 6 is sufficient to overcome the previous rejection under 35 USC 112, second paragraph set forth in Paper No. 8, paragraph 5.
19. With regard to Hume et al. (USPN 5618616), Applicant states that a terminal disclaimer is filed with respect to the teachings of Hume et al. (USPN 5618616); however, no terminal disclaimer has been filed to date. Additionally, as set forth in MPEP 804.02 III, "Rejections under 35 U.S.C. 102 or 35 U.S.C. 103 cannot be obviated solely by filing a terminal disclaimer." Therefore, this argument is not sufficient to overcome the previous rejections over Hume and Hume still stands as an applicable prior art reference.
20. With regard to Grinshpun et al. (USPN 5995013), Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leanna Roche whose telephone number is 703-308-6549. The examiner can normally be reached on Monday through Friday from 8:30 am to 6:00 pm (with alternate Mondays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



lmr  
July 22, 2002



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